REMARKS

The final Office Action of May 19, 2008 has been reviewed and the Examiner's comments carefully considered. The present Amendment After Final Rejection amends claims 17 and 18, all in accordance with the specification and drawings as originally filed. No new matter has been added. More specifically, support for the amendments to independent claim 17 can be found on page 27, lines 1-3 and page 30, lines 18-22 of the specification of the present application. The present Amendment also cancels claim 53. Additionally, claims 1-15, 32-38 and 51 were withdrawn from further consideration in view of an earlier restriction requirement. The Applicants reserve the right to file a divisional application directed to the non-elected claims. Accordingly, claims 17-19, 40-50 and 56-58 are currently pending in this application, and claim 17 is in independent form.

New Matter Rejections

The Examiner has objected to the Amendment filed March 10, 2008 under 35 U.S.C. §132(a) because it introduces new matter, and is rejecting the specification under 35 U.S.C. §112, first paragraph as failing to comply with the written description requirement. More specifically, the Examiner contends that the addition of the requirement that the carrier core material be a "soft ferrite material" provided in the Amendment filed March 10, 2008 constitutes new matter. The Examiner further contends that the only support for such a feature is in the "Background of the Invention" section on page 4, line 20 to page 5, line 9 of the specification of the present application and that such support is insufficient.

The Applicants would like to note that support for the carrier core material being a soft ferrite material is provided on page 30, line 8 to page 31, line 8 of the specification of the present application. This portion of the specification describes different magnetization values of the carrier core material of the present invention. Specifically, this portion of the specification provides that the coercive force (Hc) of the carrier core material is usually not more than $50(10^3/4\pi \cdot A/m)$ (50 Oe), preferably not more than $30(10^3/4\pi \cdot A/m)$ (30 Oe), particularly preferably not more than $15(10^3/4\pi \cdot A/m)$ (15 Oe).

In general, it is well known to those of ordinary skill in the art that a hard magnetic ferrite has an Hc of more than 1000 Oe, as evidenced by the attached documents (i) "HANDBOOK OF IMAGING MATERIALS" (see page 216) and (ii) "with Ferrite" (see last paragraph on page 151, of which an English translation is provided). On the other hand, the

Hc of the carrier core material of the present invention is not more than 50 Oe. Accordingly, one of ordinary skill in the art would classify the carrier core material as a soft ferrite material based on its coercive force value. Therefore, the specification provides adequate support for the carrier core material being a soft ferrite material. Reconsideration and withdrawal of these objections and rejections are respectfully requested.

35 U.S.C. §103 Rejections

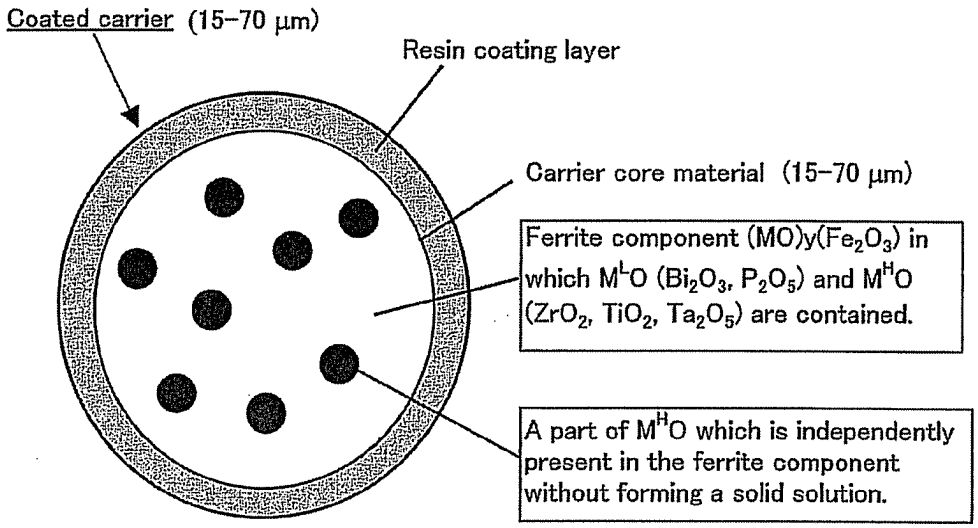
Claims 17-19, 40-50, 53 and 56-58 stand rejected under 35 U.S.C. §103(a) for obviousness based upon United States Patent Application Publication No. 2003/0122918 to Ikeda et al. (hereinafter "the Ikeda application") in view of United States Patent No. 5,637,431 to Yamane et al. (hereinafter "the Yamane patent"), United States Patent No. 6,316,156 to Takiguchi et al. (hereinafter "the Takiguchi patent") or United States Patent No. 6,548,218 to Kukimoto et al. (hereinafter "the Kukimoto patent"). In view of the above amendments and the following remarks, the Applicants respectfully request reconsideration of this rejection.

As defined by amended independent claim 17, the present invention is directed to a coated carrier comprising a carrier core material, and a resin coating layer with which the carrier core material is coated. The carrier core material comprises a ferrite component having composition represented by the following formula: $(MO)_y(Fe_2O_3)_z$. In the formula, y and z are each expressed in % by mol and are numbers satisfying the conditions of $40 \leq z < 100$ and $y+z=100$. M is a metal selected from Fe, Cu, Zn, Mn, Mg, Ni, Sr, Ca and Li. MO is one or more oxides selected from oxides of these metals, and contains, in the ferrite component, at least one metal oxide (M^LO) having a melting point of not higher than 1000°C, and at least one metal oxide (M^HO) having a melting point of not lower than 1800°C. The metal oxide (M^HO) is selected from the group consisting of ZrO_2, TiO_2 and Ta_2O_5. The metal oxide (M^LO) is selected from metal oxides other than the metal oxide (MO). A part of the metal oxide (M^HO) is independently present in the carrier core material for forming the coated carrier. The carrier core material is a soft ferrite material and the metal oxide (M^LO) is selected from the group consisting of Bi_2O_3 and P_2O_5. A coercive force (Hc) of the carrier core material is not more than 50 Oe and the carrier core material has an average particle diameter of 15 to 70 μm.

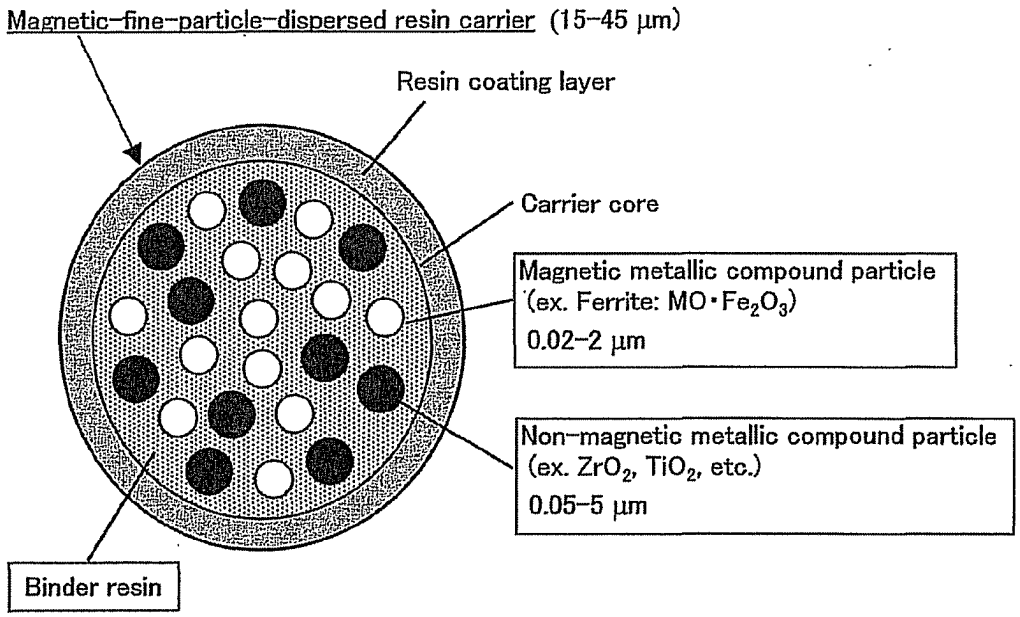
Accordingly, the present invention relates to a coated carrier comprising a carrier core material and a resin coating layer with which the carrier core material is coated. The carrier core material comprises a specific ferrite component and contains at least one M^LO (e.g., Bi_2O_3, P_2O_5) and at least one M^HO (e.g., ZrO_2, TiO_2, Ta_2O_5) in the ferrite component. At least a part of the M^HO is independently present in the carrier core material, and the carrier core material has an average particle diameter of 15 to 70 μm.

On the other hand, the Ikeda application is directed to a magnetic-fine-particle-dispersed resin carrier comprising a carrier core and a resin coating layer with which the carrier core is coated. The carrier core comprises a magnetic metallic compound (e.g., ferrite) particles, non-magnetic metallic compound (e.g., TiO_2, ZrO_2) particles and a binder resin. The magnetic metallic compound particles and the non-magnetic metallic compound particles are dispersed in the binder resin. The magnetic metallic compound particles have a number-average particle diameter of from 0.02 μm to 2 μm and the non-magnetic metallic compound particles have a number-average particle diameter of from 0.05 μm to 5 μm (see paragraphs [0040], [0041], [0046], [0047], [0066] to [0072], [0074], [0076], [0078] and [0086] of the Ikeda application).

However, the Ikeda application does not teach or suggest a positive significance for selecting TiO_2 or ZrO_2 from many non-magnetic metallic compounds exemplified in paragraph [0072] thereof, and there is no Example using TiO_2 or ZrO_2. In addition, the Ikeda application does not teach or suggest that the M^LO (e.g., Bi_2O_3 or P_2O_5) is contained in the ferrite particles as in the present invention. The coated carrier of the present invention and the magnetic-particle-dispersed resin carrier of the Ikeda application are illustrated in the following schematic cross-sectional views.



Coated carrier of the present invention



Resin carrier of the Ikeda application

In the resin carrier of the Ikeda application, the magnetic compound particles and the non-magnetic compound particles are dispersed in the binder resin. This is clearly shown in the above figures. On the other hand, in the coated carrier of the present invention, the carrier core material comprises the ferrite component, M^LO and M^HO and does not

contain a binder resin. Accordingly, the ferrite component, the M^LO and the M^HO are not dispersed in a binder resin in the present invention.

In addition, independent claim 17 requires that at least a part of the M^HO is independently present in the ferrite component. On the other hand, in the resin carrier of the Ikeda application, the non-magnetic compound (e.g., TiO_2, ZrO_2) particles are dispersed in the binder resin. Accordingly, the Ikeda application does not teach or suggest that the non-magnetic compound (e.g., TiO_2, ZrO_2) is contained in the magnetic compound (e.g., ferrite) particle, especially that at least a part of the non-magnetic compound (TiO_2 or ZrO_2) is independently dispersed inside the ferrite particle.

Further, the magnetic metallic compound (e.g., ferrite) particles of the Ikeda application are fine particles having a number-average particle diameter of from 0.02 μm to 2 μm. This provides an indication that the carrier of the Ikeda application has a volume-based 50% particle diameter (D50) of from 15 μm to 45 μm (see paragraph [0052] of the Ikeda application) is a resin carrier in which the magnetic fine particles are dispersed in a binder resin. On the other hand, the carrier core material of independent claim 17, which is made mainly of ferrite component, has an average particle diameter of 15 to 70 μm. Therefore, the magnetic metallic compound (e.g., ferrite) particle of the Ikeda application is very different from the carrier core material of independent claim 17 in the particle size. In addition, the carrier of the present invention is not a magnetic-fine-particle-dispersed resin carrier like the resin carrier disclosed in the Ikeda application.

The Yamane patent, the Takiguchi patent and the Kukimoto patent each disclose magnetic particles and are provided by the Examiner as allegedly teaching the use of Bi_2O_3 in a carrier for controlling electrical resistance. These references do not cure the deficiencies of the Ikeda application discussed hereinabove. More specifically, these references do not teach or suggest that at least a part of the M^HO is independently present in the carrier core material, or that the carrier core material has an average particle diameter of 15 to 70 μm.

For the foregoing reasons, the Applicants believe that the subject matter of amended independent claim 17 is not rendered obvious by the Ikeda application in view of the Yamane patent, the Takiguchi patent and the Kukimoto patent. Reconsideration of the rejection of claim 17 is respectfully requested.

Claims 18, 19, 40-50 and 56-58 depend from and add further limitations to amended independent claim 17 or a subsequent dependent claim and are believed to be patentable for the reasons discussed hereinabove in connection with amended independent claim 17. Reconsideration of the rejection of claims 18, 19, 40-50, 56 and 58 is respectfully requested.

Claims 17-19, 40-50, 53 and 56-58 stand rejected under 35 U.S.C. §103(a) for obviousness based upon United States Patent No. 5,874,019 to Uchida et al. (hereinafter "the Uchida patent") in view of the Yamane patent, the Takiguchi patent or the Kukimoto patent. In view of the above amendments and the following remarks, the Applicants respectfully request reconsideration of this rejection.

As discussed hereinabove in greater detail, the present invention is directed to a coated carrier comprising a carrier core material and a resin coating layer as defined by amended independent claim 17.

The Uchida patent is directed to magnetic particles for a magnetic toner. The particles include Fe^{2+}-containing iron oxide particles having an average particle size of 0.05 to 0.30 μm, and containing not less than 0.9 atm % and less than 1.7 atm % of silicon. The particles also have a substantially cubic shape. The magnetic particles are defined as core particles, and a compound having a hydrophobic group is provided on the surface of each of the core particles in an amount of 0.1 to 5.0 wt %. The Examiner contends that the Uchida patent discloses a resin coated carrier core comprising more than two groups of metal oxides, especially with one or more metal oxide groups of TiO_2 and ZrO_2.

The Applicants respectfully disagree with the Examiner's interpretation of the Uchida patent. The Uchida patent does not disclose a resin coated carrier, but instead discloses magnetic particles for a magnetic toner. The magnetic toner is completely different from the coated carrier of the present invention.

In addition, the Uchida patent does not teach or suggest that the carrier core material has an average particle diameter of 15 to 70 μm. Instead, the magnetic particles for the magnetic toner of the Uchida patent have an average particle size of 0.05 to 0.30 μm (see column 6, lines 22-24 of the Uchida patent).

Further, the coercive force (Hc) of the magnetic particles for the magnetic toner of the Uchida patent at 10 kOe and average particle size d (μm) thereof satisfy the following relationship (see column 6, lines 56-60 of the Uchida patent):

$$147\text{-}322.7*d \leq Hc \leq 207\text{-}322.7*d.$$

Accordingly, the magnetic particles of the Uchida patent have Hc of **not less than 50.19 Oe** (=147-322.7*0.30) because the average particle size of the magnetic particle is 0.05 to 0.30 μm as described above. In addition, the Hc of magnetic particles prepared in the Examples of the Uchida patnet are not less than 85 Oe (see Tables 1 to 6 of the Uchida patent). On the other hand, independent claim 17 requires the carrier core material of the present invention to have an Hc of not more than 50 Oe.

The Yamane patent, the Takiguchi patent and the Kukimoto patent each disclose magnetic particles and are provided by the Examiner as allegedly teaching the use of Bi_2O_3 in a carrier for controlling electrical resistance. These references do not cure the deficiencies of the Uchida patent discussed hereinabove.

For the foregoing reasons, the Applicants believe that the subject matter of amended independent claim 17 is not rendered obvious by the Uchida patent in view of the Yamane patent, the Takiguchi patent and the Kukimoto patent. Reconsideration of the rejection of claim 17 is respectfully requested.

Claims 18, 19, 40-50 and 56-58 depend from and add further limitations to amended independent claim 17 or a subsequent dependent claim and are believed to be patentable for the reasons discussed hereinabove in connection with amended independent claim 17. Reconsideration of the rejection of claims 18, 19, 40-50 and 56-58 is respectfully requested.

Claims 17-19, 40-50, 53, 56 and 58 stand rejected under 35 U.S.C. §103(a) for obviousness based upon United States Patent No. 6,165,663 to Baba et al. (hereinafter "the Baba patent") in view of the Yamane patent, the Takiguchi patent or the Kukimoto patent. In view of the above amendments and the following remarks, the Applicants respectfully request reconsideration of this rejection.

As discussed hereinabove in greater detail, the present invention is directed to a coated carrier comprising a carrier core material and a resin coating layer as defined by amended independent claim 17.

The Baba patent is directed to a magnetic coated carrier suitable for constituting a two-component type developer for use in electrophotography. The coated carrier is composed of magnetic coated carrier particles comprising magnetic carrier core particles each having a binder resin, metal oxide particles and a coating layer surface coating each carrier core particle. The metal oxide particles have been subjected to a surface lipophilicity-imparting treatment.

The magnetic coated carrier disclosed in the Baba patent is similar to the magnetic-fine-particle-dispersed resin carrier disclosed in the Ikeda application discussed hereinabove. In other words, the Baba patent discloses a magnetic coated carrier having a carrier core and a resin coating layer with which the carrier core is coated. The carrier core comprises magnetic metal oxide (e.g., ferrite) particles, non-magnetic metal oxide (e.g., TiO_2, ZrO_2) particles and a binder resin. The magnetic metal oxide particles and the non-magnetic metal oxide particles are dispersed in the binder resin. The magnetic metal oxide particles have a number-average particle diameter of from 0.02 μm to 2 μm and the non-magnetic metal oxide particles have a number-average particle diameter of from 0.05 μm to 5 μm (see column 6, lines 36-53 and column 7, lines 5-16 and 29 of the Baba patent).

Accordingly, the Baba patent does not teach or suggest that at least a part of the M^HO is independently present in the carrier core material, or that the carrier core material has an average particle diameter of 15 to 70 μm.

The Yamane patent, the Takiguchi patent and the Kukimoto patent each disclose magnetic particles and are provided by the Examiner as allegedly teaching the use of Bi_2O_3 in a carrier for controlling electrical resistance. These references do not cure the deficiencies of the Ikeda application discussed hereinabove. More specifically, these references do not teach or suggest that at least a part of the M^HO is independently present in the carrier core material, or that the carrier core material has an average particle diameter of 15 to 70 μm.

For the foregoing reasons, the Applicants believe that the subject matter of amended independent claim 17 is not rendered obvious by the Baba patent in view of the Yamane patent, the Takiguchi patent and the Kukimoto patent. Reconsideration of the rejection of claim 17 is respectfully requested.

Claims 18, 19, 40-50 and 56-58 depend from and add further limitations to amended independent claim 17 or a subsequent dependent claim and are believed to be

patentable for the reasons discussed hereinabove in connection with amended independent claim 17. Reconsideration of the rejection of claims 18, 19, 40-50 and 56-58 is respectfully requested.

Conclusion

Based on the foregoing amendments and remarks, reconsideration of the rejections and allowance of pending claims 17-19, 40-50 and 56-58 are respectfully requested.

Respectfully submitted,

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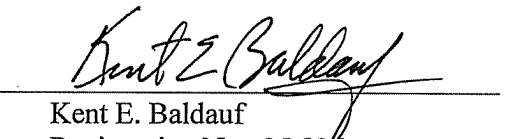
By 

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